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ABSTRACT

In this guide the logic of product evaluation is described in a framework that is meant to be general and adaptable to all kinds of evaluations. Evaluators should consider using the logic and methods of product evaluation when (1) the purpose of the evaluation is to aid evaluators in making a decision about purchases; (2) a comprehensive assessment of a product or program is important, and omitted information might be critical; and (3) the evaluation is inherently comparative or summative in nature. A product evaluation checklist is presented and discussed. Major considerations on the checklist include examining the needs of and resources available for the consumer, looking at the range of possible products, studying the products in the light of needs and resources, and, through synthesis and summary, determining the best buy. Included in the discussion of each item on the checklist are specific questions, illustrative examples of how to apply the checklist, and warnings about ways to go wrong. (RM)

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EVALUATION GUIDES

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Guide Number 10

METHODS OF PRODUCT EVALUATION

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U.S. DEPARTMENT OF EDUCATION
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Product evaluation is described, including:

- Key Characteristics
- When to Use the Methods of Product Evaluation
- A Comprehensive Evaluation Checklist
- Discussion of the Checklist

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The World is too much with us
Getting and spending we lay waste our
powers. Wordsworth

Caveat Emptor

In this guide the logic of product evaluation is described in a framework that is meant to be general and adaptable to all kinds of evaluations.

KEY CHARACTERISTICS OF PRODUCT EVALUATION

- Product evaluation aims to provide information that will aid decision-makers in getting maximum value for the money they spend.
- Product evaluation is not done in a vacuum--it considers the needs and resources of the consumer and the environment of use.
- Product evaluation is inherently comparative in nature; a range of products rather than a single product is considered.
- Product evaluation moves to an overall evaluation of worth or value and synthesizes independent ratings over many dimensions of performance.

WHEN TO USE THE METHODS OF PRODUCT EVALUATION

Evaluators should consider using the logic and methods of product evaluation when

- the purpose of the evaluation is to aid decision makers in making a buy/no-buy kind of decision;
- a comprehensive assessment of a product or program is important and omitted information might be critical;
- the evaluation is inherently comparative or summative in nature.

AN EVALUATION CHECKLIST

The checklist shown on the following page is a comprehensive though idealized list of product evaluation points. Therefore, although few, if any, evaluations satisfy all the requirements of the checklist, it still has heuristic value. By addressing each

of the points included in the checklist, the evaluator is unlikely to omit anything that would have critical bearing on the decisions to be made.

The checklist described below is derived from, and is illustrated with, examples from the field of product evaluation. It takes little effort to see that general concerns of the checklist apply equally well to program evaluation. Since product evaluation is a more refined and practiced art than program evaluation, it is worthwhile to study the practices in this field and extract what is applicable for other areas of evaluation. Each of the points in the checklist below is described more fully in the sections which follow.

Product Evaluation Checklist

Looking at the Consumer	NEEDS - What qualities are desirable? RESOURCES - What can be drawn upon?
↓	
Looking at the Range of Possible Products	CRITICAL COMPETITORS - What's available?
↓	
Studying the Products in the Light of Needs and Resources	PERFORMANCE TESTS - How well do they work? FEATURES AND FLAWS - What else do they have/do? COSTS - How much do they really cost?
↓	
Bringing It All Together	SYNTHESIS AND SUMMARY - Which is the best buy?

DISCUSSION OF THE CHECKLIST

Included in the discussion of each checklist point are defining questions, illustrative examples of how to apply the checklist points, and also warnings about ways to go wrong.

NEEDS

- What qualities are desirable in this product, and to what degree?

It is not enough to study only the product: the evaluator must also look at the consumer and identify his or her potential needs--a process about which the following notes are made.

1. Needs are best determined by hypothesizing consumer characteristics and carrying out an analysis of desired performance functions. Sometimes an idealized product can be specified in a functional way, such as this description from Consumer Reports:

> a good barbecue sauce should not be so strongly flavored as to obliterate the flavor of the meat itself, nor should it be so mild as to add nothing . . .

Sometimes clarification and definition of product functions are required:

> antiseptic - used for washing around the wound
> wound cleanser - for cleaning the wound itself
> ointments - protecting the wound from further infection
>
> Consumer Reports, July 1984

2. When possible, it is most useful to specify needs in terms of quantifiable dimensions:

> a timekeeping device is needed which is small and portable (wristwatch), which is accurate to 15 seconds per day, and waterproof (to 100 feet).
>
> Consumer Reports, July 1984

3. Evaluation is most straightforward when needs are stated directly in performance terms. Usually, however, needs are not well understood nor can they be clearly stated. The evaluation must then begin with an initial attempt to determine, and state at least loosely, the priority needs. Then, a cyclical process of testing (learning about the product), restating the need, more testing, restating the need . . . can follow.

   Example:

   1. Stating the need: A boat is needed that is fit enough to sail the oceans of the world.

   2. Learning about the product: Expert sailors are consulted as to what makes a well-founded boat.

3. Restating the need: A boat is needed that has (a) the ability to right itself in a knockdown, (b) the ability to claw off a lee shore in a storm, (c) features of self-steering and easy handling, and (d) an average cruising speed of 5 or more knots.

Ways to Go Wrong

1. Overly rigid definition of the user:

Consumer Reports (CR) gave the Minolta 110 camera a negative evaluation as it was significantly bulkier and heavier than other 110 cameras. The Minolta, however, did possess zoom capabilities and performed as well as many of the larger 35mm zoom cameras. If Consumer Reports had included the larger zoom audience (both 35mm and 110 cameras), the Minolta would have received high ratings.

2. Inaccurate conception of use:

Consumer Reports rated a Norelco midget recorder behind other models because it had poor long-range pickup of music or talks. In this evaluation, CR missed the point that the recorder was designed primarily for dictation where elimination of background noise is essential. Thus, it was by design that it failed on tests of long-range pickup. A brief survey of users or a functional analysis would have revealed the mistake.

RESOURCES

- What resources are available to obtain, maintain, or improve the chosen product?

A second look at the consumer is required here. The evaluator must look at the product not only in terms of what consumers need, but also in terms of what resources they may already possess.

1. Money:

Cash or credit is usually needed for a purchase. It is useless to determine that a $25,000 Mercedes is the best buy when consumers have only $7,000 in their budget. Many evaluations will divide the products to be surveyed into cost categories before beginning comparisons.

2. Other products:

There may already be, on the shelves or in service, a product that can fill the needs of the consumer. This is especially

true when the needs are stated loosely in terms of desired functions, rather than in terms of a specific brand or model.

Example:

> In order to get a small stereo system, a consumer may wish to purchase adapters and speakers to supplement an already-owned Sony Walkman. This may be an equally effective and much cheaper solution than buying an entire small stereo system.

3. Skills:

Especially when considering high technology products, the presence of skilled operators and maintenance people may significantly affect the choice of purchase. Also, the feasibility of adapting an existing product may depend upon the availability of skilled people to do the work.

4. Environmental supports and constraints:

The existence of other interacting systems or equipment, or potentially compatible systems, may alter the choice of product to be purchased.

Example:

> The lack of 220 volt power may greatly limit the choices in deciding which clothes dryer to purchase.

CRITICAL COMPETITORS

- Which products are available in the range defined by the relevant needs and resources?

Product evaluation is by nature comparative and judgmental. It is not enough for an evaluator, for example, to decide that an IBM Selectric III is the best buy because it meets the needs of the consumer and falls within the limits of the resources available. To evaluate only one machine may neglect a far superior buy in terms of quality or price, or both. Comparison is required.

A "critical competitor" is any product that does as well in terms of its outcome relative to its costs, and relative to the needs and resources of the consumer. Critical competitors are alternate solutions to the problem posed by the consumers' unfilled needs and limited resources. Critical competitors come in the following four types.

1. The obvious competitors:

   These include market competitors and nearby relatives. For example, the competitor of the Volkswagen (VW) would be other compacts of similar price, features, and performance characteristics. Also, one might want to consider comparisons with other current VW models, or even earlier models.

2. The emergent competitors:

   As one tests a product, the discovery of significant side-effects or unexpected functions may lead to the reconceptualization of the product itself. This, in turn, may call for new competitors and comparisons.

   Examples:

   A new algebra textbook is so well written and full of examples that it appears to lead to significant reading gains. Comparison with other more standard readers is called for.

   A photographic copier produces copies of such high quality that it is competitive with commercial printers--with which it should now be compared.

3. The radical critical competitor:

   By going back to basic needs (the desired performance functions stated in most general terms), an entirely different notion of competitor might be conceived.

   Example:

   Poor design in a newly completed building resulted in having insufficient elevators to serve rush hour crowds. The problem was exacerbated by the lack of indicators in the lobby, which resulted in greater uncertainty and irritation among the waiting would-be elevator patrons. The cost of installing a new elevator (or even indicators) in a completed building was exorbitant. Clearly, an alternate solution, a critical competitor for an elevator, is called for.

   By reconceptualizing the situation, we can see that the problem was twofold: (1) people needed to be moved faster, and (2) the irritation had to be remedied. Addressing the second of the two aspects of the problem, full-length mirrors were installed on both sides of the elevator, and on the wall facing the doors. In a testament to the human ego, the

level of irritation dropped radically. Thus, a mirror turns out to be a clever and inexpensive critical competitor for an elevator indicator . . .

4. The invented competitor:

At times the evaluator may wish to create--think up and develop--a suitable competitor. In the absence of a suitable horse to run against, the evaluator may have to go to some lengths to provide an optimal competitor.

Example:

In testing computer assisted instruction (CAI), an evaluator could not find a similar CAI program to compare with. By removing the instruction from the computer and putting it in the form of a programmed text, the evaluator created an excellent competitor. Not only was it much cheaper, but it gave a way of quite directly assessing the contribution of the machine to the learning process. This can be an embarrassing test for any computer based learning program, as it often produces equal learning gains at a fraction of the cost.

The need to test (sometimes even to invent and develop) critical competitors increases the work and expense of the evaluation. Judicious and parsimonious decisions need to be made in the selection of competitors. It should also be noted that in using a comparative approach, one may or may not discover <u>why</u> one product is better than another, but this is rarely crucial for the consumer to know. It is simply easier, at times, to run comparison tests than it is to make absolute measurements of performance differences. (For example, 12 meter yachts are tuned for the America's Cup by constant comparison with a second trial yacht which is held constant. Small increments of speed in varying conditions are simply too hard to measure in absolute terms.)

<u>Ways to Go Wrong</u>

1. No competitor:

Like doing an experiment without a control group, the lack of a competitor leaves many questions unanswered.

2. Accepting the market definition of the competitor:

Example:

When commercially available rug cleaners were tested against each other, little difference in price or

performance was noted. In a moment of skepticism, an evaluator compared them against a weak solution of Tide detergent. Tide was found to be more effective at a fraction of the cost.

3. Restricting the range of competitors:

The earlier example of the low rating of the Minolta 110 camera can be seen as a failure to consider the right competitors. When compared with 110 cameras, the Minolta appeared to be excessively bulky. When 35mm cameras were included, the comparison was far more favorable. The close relationship between the choice of critical competitors and the definition of consumer needs is obvious.

PERFORMANCE TESTS

- o Which products have which performance qualities, and to what degree?

How well does it work? What functions, as specified by the needs analysis, are met by the product(s) and how well?

In evaluating performance the evaluator must decide which variables to test, to what degree of precision they should be tested, and what assumptions can be made about the potential users. Also, whenever possible, products should be tested in different modes of operation--in a way that measures maximum performance, in a way that the product is likely to be used, and finally, if different, in a way that corresponds to the manufacturer's use directions.

Sometimes the ultimate desired performance of a product can be broken down into specific component capabilities.

Example:

In evaluating FM receiver capabilities, CR rates the performance of each receiver in terms of its sensitivity (ability to pick up weak signals), its capture ratio (the ability to reject weak interfering signals), the frequency response (how different frequencies are received), freedom from distortion and stereo separation. (See Table 1.)

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Table 1
Breaking Down Performance into Component Qualities

Ratings

Mid-priced stereo receivers

Listed in order of estimated overall quality; where overall scores are equal, listed alphabetically. Differences in score of 7 points or less were judged insignificant. Ratings should be read in conjunction with table of specifications and features on pages 380-381.

Excellent ● Very good ◓ Good ○ Fair ◒ Poor ●

Brand and model	Overall score	Dimensions	Features and convenience	Sensitivity	Capture ratio	Strong-signal capability	Freedom from distortion	Frequency response	Tone control action	Amplifier power—8 ohms	Amplifier power—4 ohms	Comments
			FM Tuner									
SHERWOOD S2660CP	92	4⅞x17⅛x15¼	●	◓	●	●	◓	●	○	52	67	—
MITSUBISHI DA-R15	88	5⅜x18⅝x15⅞	●	◓	◓	◒	○	●	◓	58	76	A,D
SCOTT 359RS	88	4⅝x17x14	◓	◓	●	●	◓	◓	◓	55	65	C
ONKYO TX-35	86	4⅛x16⅛x14⅝	●	◓	●	○	○	●	○	50	67	—
AKAI AAR32	82	4⅜x17⅜x14½	●	◓	◓	○	◒	◓	○	60	66	—
REALISTIC STA2270	82	5¼x18⅞x14¼	◓	○	◓	◓	○	◓	◓	68	93	C
YAMAHA R70	82	5⅞x17⅛x15⅜	◓	◓	◓	○	◓	◓	◓	54	64	—
SONY STRVX550	81	4⅛x17x14⅞	●	○	●	●	○	◓	○	61	59	B
MARANTZ SR620	80	4½x16½x13½	◓	◓	◓	○	◒	◓	◓	57	63	—
PIONEER SX50	80	4⅞x16⅝x12⅜	◓	○	●	◓	◓	●	○	61	[1]	—
HARMAN-KARDON HK590I	79	5⅜x17⅛x14½	◓	○	●	●	◓	◓	◓	50	75	B
HITACHI HTA4F	79	4⅜x17⅛x14¼	○	◓	◓	○	◒	●	◓	45	36	—
JVC RX44	79	4⅜x17⅛x14½	○	◓	●	◒	○	◓	◓	59	51	A
FISHER RS255	78	4⅜x17⅜x12⅛	○	○	◓	○	○	◓	◓	58	[1]	—
NIKKO NR700	78	4⅞x17⅝x15⅞	○	○	◓	◒	◓	◓	○	43	52	A,B
KENWOOD KR930	76	5¼x17⅜x12	○	◓	●	○	◓	◓	◒	63	—	
SANSUI Z3000X	75	5¼x17x15	●	○	●	○	◒	●	◒	67	53	B
DENON DRA400	74	4½x17⅛x15⅞	○	◓	◓	◒	◒	◓	○	48	55	—
TECHNICS SA410	74	3⅞x17x11⅞	○	◓	◓	○	◒	◓	◓	53	69	A
TOSHIBA SAR3	71	4⅝x16½x13¼	○	○	●	○	◓	◓	◓	49	[1]	A,E

[1] *Manufacturer does not recommend 4-ohm speakers.*

PERFORMANCE NOTES
FM Tuner: *All* were judged excellent in stereo separation and AM rejection, and very good in selectivity.
Phono input: *All* were judged excellent in frequency response, freedom from distortion, and signal-to-noise ratio, and were satisfactory in cartridge-matching factors.
Amplifier: *All* were judged excellent in signal-to-noise ratio.
Except as noted, all were judged excellent in frequency response and freedom from distortion.

KEY TO COMMENTS
A - Adjacent-channel selectivity was better than with most.
B - AM tuner frequency-response better than most.
C - Phono input has subsonic filter built in.
D - Has switch to improve adjacent-channel selectivity.
E - Judged very good in amplifier frequency-response and freedom from distortion.

Ways to Go Wrong

1. The technist fallacy:

   Sometimes products are tested for differences in levels of performance that far exceed any differences ever likely to be noticed in actual use. For example, Stereo Review ranks stereos according to differences in measures of fidelity that cannot be detected by the human ear. In the technist fallacy, distinctions are made where differences do not exist.

2. Features over functions:

   Under the guise of performance testing, features may be described while performance functions are ignored. Sailing journals are particularly guilty of this error in their "performance tests" of new production boats. Their evaluation articles contain elaborate descriptions of deck and interior features, some discussion of design, little information about performance, and usually no test data about seaworthiness in difficult seas.

3. Poor sampling:

   Sometimes nonrepresentative products are tested, or alternatively, products are tested without sufficient sampling. If the variance among the cars of a particular make is greater than the variance between makes, and the performance tests use only one car of each make, then such tests will give the consumer almost no reliable information.

4. Restricting the range of consumers:

   The potential users must be considered in designing performance tests. When testing stereo equipment for high priced-cars, the tests failed to take into consideration that the purchasers of such equipment are likely to be older people who have significantly higher frequency hearing loss. If the testers, as is likely, are younger, the true consumer may be misrepresented.

5. Restricted range of environments:

   In Northern Vermont, the way a car performs on icy and snow-covered roads is of great concern to consumers, and is thus a key variable in their purchasing decisions. Few car evaluations provide such climate-related data.

   When the Environmental Protection Agency (EPA) tests cars for their comparative fuel consumption (mpg ratings), they conduct the tests in the lab on a dynamometer. Such a machine cannot take into account wind resistance, and thus the EPA measures are, at best, very rough estimates. They are often at wide variance with the results of other more realistic road tests.

FEATURES AND FLAWS

- What secondary features, functions, or characteristics do the products possess?

In addition to basic performance characteristics, products are often compared as to their special features and flaws. Advantages and disadvantages in terms of convenience, comfort, feel, style, complexity, sturdiness, noise, smell, etc., can be compared.

Examples:

> In an evaluation of dishwashing liquids, a dermatologist was asked to rate the therapeutic or irritating effect of the liquids tested on the hands.
>
> The rear wiper of the Volvo is given high marks as a sensible and very convenient feature.
>
> The plastic-coated handles of Sears' slip-joint pliers are recommended as a comfort feature.

In discriminating between products, often the detailing of the flaws discovered in a product is even more helpful than the listing of features. The following statements are from Consumer Reports (July 1984).

Examples:

> The climate control system required some fiddling, and the radio was a nightmare of needless complexity.
>
> The milkshake was very thick and foamy, leaving an unpleasant coating in the mouth; it tasted strongly of artificial chocolate and was quite sweet.
>
> The Lincoln accumulated 11 sample defects. The driveline vibrated at expressway speeds. The right door lock was defective, and there were many cosmetic flaws inside and outside the car. We expected more from a car in this price range.

The consideration of flaws in a product can be very important and can even override all other considerations when they make the product unsafe or otherwise unacceptable:

Examples:

> In its evaluation of antiseptics, CR points out that the long-used favorite, Mercurochrome, was found to be unsafe or ineffective, or both.

CR will, from time to time, rate cars as unacceptable because of poor handling under emergency conditions, or will rate an electrical appliance as unacceptable because of potential shock hazard.

A textbook may be judged unacceptable if it is found to be racist or sexist.

COSTS

- What are the true costs of the products?

It is not enough to report the list price of the product as the cost of the product. Since the cost of the product is half of the input in determining a best-buy, the consumer needs to have as complete and accurate a picture of costs as possible. The following notes reflect some refinements to determining actual costs.

1. The true price of the product:

   Very often substantial discounts are available. While it is not usually possible to state specific prices, the evaluator may be able to indicate the range of discounts available. Also, many list prices do not include delivery charges, dealer-prep charges, taxes, options, or other mark-ups.

2. Maintenance costs:

   Estimates can be made about repair frequency and repair costs. For some products the costs of parts and labor may approach the original purchase costs in a very short time. (For example, safety-blade razors are often sold at a very low price as their purchase forces the consumer to buy that brand of replacement blades which are sold at considerable profit.)

3. Support costs:

   Operating costs, energy costs, or other support costs can be estimated.

4. Additional costs or cost savings can be noted:

   - Warranties can vary greatly in their coverage and time limitations.
   - Certain products may qualify for special tax treatment.
   - Certain products are likely to have particularly high (or low) insurance costs.
   - Some products have traditionally strong resale value.

Ways to Go Wrong

1. Comparing nonequivalent versions:

   A 10-year-old used cruising boat may cost $50,000. For the same price one may be able to buy a new boat "ready to go." However, when the production boat is actually brought up to the standards of the used boat in terms of safety, special features, and backup equipment, the cost of the new boat may have nearly doubled.

2. Comparing nonequivalent quantities:

   Sixteen ounces of the best dishwashing liquid will wash five times as many dishes as the least effective dishwashing liquid. To compare the cost-per-ounce of these two products would be highly misleading.

3. Overestimating salient cost features:

   Consumers often use mpg ratings to infer the relative costs of operating automobiles. If one drives 15,000 miles per year, the difference between a 35 mpg and 45 mpg car is only about $120 per year--a cost difference that may be much lower than other less obvious cost factors.

SYNTHESIS AND SUMMARY

- Which product is the best buy?

How do we pull it all together to come to an overall judgment?

Consumer Reports (CR) uses several different approaches to summarizing and making recommendations. In some evaluations CR lists products in order of overall quality, with comparative component ratings shown on different performance characteristics and features. (See Table 1.) CR also separates out nonacceptable products because of very low quality or a safety hazard. In some evaluations, CR will divide products into two levels of quality, giving a "check rating" to those items that are overall high quality and judged to be superior to noncheck rated items. CR also gives a "best buy" rating to those products judged to be "of overall high quality and of relatively low price." Exactly how these judgments are made is not detailed, but CR claims it is a mixture of controlled testing and expert judgment.

The Weighted Sum

The classic way to combine component ratings to arrive at an overall rating is to use a weighted-sum approach. This means that each performance and feature dimension is given a weight proportional to its overall importance; the rating in each dimension is then multiplied by this weight and the products are then summed to give an overall rating for each item tested.

There are several difficulties with this approach:

1. It is not obvious how to decide the weighting scale for the performance and feature dimensions, nor is it easy to decide what weightings should be given.

2. There is rarely a linear relationship between the utility (the amount a need is satisfied and the importance of that need) and the performance measure. Thus, one often has the uneasy feeling that somehow this mathematical summation is too simplistic or is missing something important but ineffable.

In spite of these difficulties, the weighted-sum approach can be useful, and the following suggestions are made for its effective use:

1. Simplify at the beginning by deciding which performances are absolutely essential. Some competitors may be eliminated because they fail to provide some critical function, or they fall below a certain standard.

2. Start by assigning weights in a ratio way. "This is twice as important as that; these two are the same importance," and so on.

3. With the weightings assigned, carry out the comparison of all the products. How do the final rankings agree with your intuition about them? If they are different, note what weightings cause the difference--perhaps they should be changed.

4. Weightings can now be changed. Perhaps one dimension is as important as a whole class of other dimensions or as all other dimensions together. Redo the ratings and again compare with your intuition about them.

The point here is that the weighted sum approach and one's intuition complement each other. By using one as a check against the other, both become clearer. By going back and forth they should converge until they blend into each other.

Other Methods

There are, of course, other ways of arriving at summary comparisons, and there is much to be said for giving the consumer many different ways of seeing the comparisons:

1. The match play approach:

   Final candidates are compared against each other in head-to-head competition. By elimination or "round-robin" comparisons, one gains a different perspective on the relative strengths and weaknesses of the products.

2. Expert judgment:

   Those well-versed in the area of the products being studied can be solicited for their judgments as to overall quality based on their own experience, and/or they can review the weightings and procedures used in a weighted-sum approach.

3. Anecdotal evidence:

   The description of an expert race-car driver comparing the performances of cars on an obstacle course may be of great value to some consumers. This kind of connoisseur's appraisal may be translated into numerical rating, or perhaps more instructively kept in narrative form.

4. The naive consumer:

   Like the expert, naive consumers have a unique and valuable perspective to offer. They can be used to review a weighted-sum approach, or to give their own narrative evaluations.

The evaluator does much for the consumer when he/she does the work of synthesizing the component ratings. The use of multiple methods and an iterative converging procedure minimizes the chance of being far off the mark. If the overall product ratings are supplemented by component ratings, pair-wise comparisons, and expert and novice testimony, then the consumer has a strong basis for making an intelligent purchasing decision.

REFERENCE

Scriven, M. (1981). Product evaluation. In N. L. Smith (Ed.), New techniques for evaluation. Beverly Hills, CA: Sage Publications.

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